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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,574	11/30/2001	Shigeki Tomishima	57454-309	3797

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EXAMINER

MANDALA, VICTOR A

ART UNIT PAPER NUMBER

2826

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/996,574

Applicant(s)

TOMISHIMA, SHIGEKI

Examiner

Victor A Mandala Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 6, 7 and 9-12 is/are rejected.
- 7) ☒ Claim(s) 2 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

DETAILED ACTION

Response to Amendment

1. The Applicant argues that the reference U.S. Patent No. 5,903,492 Takashima does not teach the limitations in claims 1-2, 4, & 9-12. The examiner has considered the arguments found in Paper No. 11 and finds them to be persuasive. The examiner retracts the rejections and the notice of allowability in Paper No. 10. Claims 1-2, 4-7, & 9-12 will be further examined.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 6-7, 9-10, & 12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,963,467 Miyatake et al.

2. Referring to claim 1, a semiconductor memory device comprising: a plurality of memory cells arranged in rows and columns; a plurality of sub word lines, (Figure 9 #M2), provided corresponding to the respective memory cell rows, each having memory cells on a corresponding row connected thereto; a plurality of main word lines, (Col. 3 Lines 8-22), each provided corresponding to a prescribed number of sub word lines, (Figure 9 #M2 and Col 3 Lines 23-42).

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in said plurality of sub word lines, (Figure 9 #M2), and disposed in a first conductive layer, (Figure 9 #M2), for transmitting a row select signal: a plurality of shunting interconnection lines, (Figure 9 #M1), provided corresponding to the respective sub word lines, (Figure 9 #M2), in a second conductive layer, (Figure 9 #M1), formed under said first conductive layer, (Figure 9 #M2), each shunting interconnection line, (Figure 9 #M1), for electrically connecting to a corresponding sub word line, (Figure 9 #M2), at a prescribed interval and allowing signal transmission between said each shunting interconnection line, (Figure 9 #M1), and said corresponding sub word line, (Figure 9 #M2); and a plurality of sub word drivers, (Col. 3 Line 25-26), provided corresponding to the sub word lines, (Figure 9 #M2), each for driving a corresponding sub word line, (Figure 9 #M2), and a corresponding shunting interconnection line, (Figure 9 #M1), into a selected state according to at least a row select signal on a corresponding main word line, (Col. 4 Lines 48-54).

3. Referring to claim 4, a semiconductor memory device, further comprising an intermediate voltage transmission line, (Figure 9 Common Plate Line), formed in a third conductive layer different from the first, (Figure 9 #M2), and second conductive layers, (Figure 9 #M1), for transmitting an intermediate voltage at a prescribed voltage level, (Col. 10 Lines 60-67).

4. Referring to claim 6, a semiconductor memory device, wherein each memory cell has a capacitance, (Figure 9 Cs), for storing information and said intermediate voltage is applied to a reference power supply node of said capacitance, (Col. 10 Lines 61-67).

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5. Referring to claim 9, a semiconductor memory device, further comprising a power supply line, (Figure 9 Common Plate Line), disposed in an interconnection layer different from said first conductive layer, (Figure 9 #M2), over a memory cell array in which said plurality of memory cells are arranged, for transmitting a power supply voltage, (Col. 1 Lines 25-32 & Col. 9 Lines 10-19).

6. Referring to claim 10, a semiconductor memory device, wherein said semiconductor memory device is an embedded memory, (Figure 16 #200), integrated with a logic circuit, (Figure 16 #213), on a common semiconductor substrate, (Col. 14 Lines 60-67).

7. Referring to claim 12, a semiconductor memory device, wherein said plurality of shunting interconnecting lines, (Figure 9 #M1), are each electrically connected to the corresponding sub word line, (Figure 9 #M2), through contacts formed at said prescribed interval, (Col. 11 Lines 1-6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,963,467 Miyatake et al.

8. Referring to claim 11, a semiconductor memory device, wherein the shunting interconnection line, (Figure 9 #M1), is a copper interconnection line. (See *** below).

*** Miyatake et al. discloses the claimed invention except for the shunting interconnection lines being made out of copper. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the shunting interconnection lines out of copper, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Allowable Subject Matter

9. Claims 2 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor A Mandala Jr. whose telephone number is (703) 308-6560. The examiner can normally be reached on Monday through Thursday from 8am till 6pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

VAMJ
June 18, 2003